

LEADING ARTICLE

Epidemiology—Future Directions

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THE FOCUS OF EPIDEMIOLOGY AT THE CLOSE OF THE 20TH CENTURY

As modern epidemiology measures risk across a wide range of lifestyle and occupational exposures focusing on the aetiology of chronic disease, Susser¹ notes that epidemiology has become somewhat remote from public health issues of the day. Modern epidemiology is more concerned with technique than with the issues being addressed. Susser contends that this increasing emphasis on technique is unfortunate and has occurred at the price of social understanding, with the risk that any knowledge brought to bear on prevention will be fragmentary and mechanical.¹ The multiple variables analysed are often divorced from the social context, thus sacrificing breadth of the discipline. Because epidemiology is entangled in our society we must take hold of this locus and be responsible for our research in its social context, a stance clearly in conflict with the writings of Rothman, who maintains that our focus should be on causation and that as a discipline we should avoid political or policy debates.²

Epidemiology focuses on the distribution of ill-health as well as the social determinants of disease; consequently, it is not purely an observational discipline, but participatory as well. Research on passive smoking exemplifies the political rather than the purely scientific audience for research findings. The epidemiologist has a specific responsibility to inform, even outside the scientific community.³ Regular media coverage of epidemiological findings published in leading medical journals gives clear evidence of the importance of this responsibility in the Western world. As publicity about our work has expanded over the past decade, some argue that, by informing those outside of the scientific community, we do more harm than good.

The public is not capable of interpreting data as they are so often reported in the media. Rather efforts must

be made to place data in a context that the public can understand. Misunderstanding of the risk of breast cancer among educated US women aged 40–50 years who consider that '1 in 10' means that the probability of dying in the next 10 years is 1 in 10 exemplifies the failure of our efforts to communicate.⁴ Further, this sample of women estimated that 1 in 5 women would be diagnosed with breast cancer in the next 10 years, and that mammography offered a 60% reduction in risk of breast cancer. These gross misperceptions of risk among a group of women determined by the investigators to be at average risk of breast cancer highlights the limitations and the dangers of media communication of risk.

Clearly those who translate risk of breast cancer for communication to the public need to provide appropriate explanations to allay fears.⁵ Analysis of data from the US indicates that people have a very poor understanding of disease risk. Knowledge that risk of breast cancer increases with age, for example, actually is less among older than younger women. Of women aged 25–34 years who completed the National Health Interview Survey, 35% reported that risk of breast cancer increased with age, but only 16% of women 75 and older knew that ageing was a risk factor for breast cancer.⁶

A recurring theme in recent writings is the need for epidemiologists to be more closely involved with the implementation of their research findings. We must reinstate public health action and implementation as the products of our research endeavours. In discussing occupational epidemiology and its contribution to prevention, Wegman notes that the academic discipline has become increasingly divorced from applications of prevention in the workplace.⁷ He contends that this trend slows the transfer of knowledge and thus leads to delay in prevention, with consequent damage to health and loss of life.

Wall proposes that, to prevent disease effectively, the discipline of epidemiology must bridge the gaps between social behaviour, political structure and economic power.⁸ This notion is consistent with the writings of Richmond, who defines the forces that must interact to implement prevention policy.⁹

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